

Unit 5

Day 5

Factoring Using Real Numbers

1)

$$\frac{1}{9}a^2 - \frac{1}{16} =$$

$$\left(\frac{1}{3}a + \frac{1}{4}\right)\left(\frac{1}{3}a - \frac{1}{4}\right)$$

2)

$$\frac{1}{4}x^2 + \frac{2}{5}x + \frac{4}{25} =$$

$$\left(\frac{1}{2}x + \frac{2}{5}\right)^2$$

$$2\left(\frac{1}{2}x \cdot \frac{2}{5}\right) = 2\left(\frac{2}{10}\right) = \frac{4}{10} = \frac{2}{5}$$

NOTE - we are factoring over Real Numbers, not integers!

3)

$$\begin{aligned} 9m^2 - 8 &= (3m - \sqrt{8})(3m + \sqrt{8}) \\ &= (3m - 2\sqrt{2})(3m + 2\sqrt{2}) \end{aligned}$$

4)

$$\frac{3}{2}y^2 + \frac{10}{3}y + \frac{2}{3} =$$

$$\frac{1}{6}(9y^2 + 20y + 4)$$
$$\frac{1}{6}(\underbrace{9y+18}_9)(\underbrace{9y+2}_1)$$
$$\frac{1}{6}(y+2)(9y+2)$$

5)

$$18x^2 - 1 =$$

$$(x\sqrt{18} + 1)(x\sqrt{18} - 1)$$

Factor using GCF.

6)

$$15x^{\frac{4}{3}} + 2x^{\frac{1}{3}} =$$

$$x^{\frac{1}{3}} (15x + 2)$$

7)

$$18a^{-5} + 6a^{-3} =$$

$$6a^{-5}(3 + a^2)$$

8)

$$2n^{\frac{1}{2}} + 10n^{-\frac{1}{2}} + 12n^{-\frac{3}{2}} =$$

$$2n^{-3/2}(n^2 + 5n + 6)$$

$$2n^{-3/2}(n+2)(n+3)$$



## HOMEWORK

WORKSHEET #4 1-6 (top)

Day 5 and 6 WORKSHEET 57-68 (all)

pg. 62: 69-76 (all)